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Effect of Mobile Phones on Hearing

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Abstract:

Background: In the last two decades the use of mobile phone has increased globally. This has focused interest on its possible biological effects. The surprising huge increase in the usage of mobile phone in Sudan has been a strong justification for conducting such a study, on the possible harmful effects of mobile phone on hearing sense.

Objectives: To explore possible effects of mobile phone use on hearing level in humans, and to compare between level of exposure and threshold for hearing.

Tools and Methods: this is an observational cross-sectional population-based study, conducted in Khartoum state - Sudan. Two hundred volunteers filled questionnaires and had their hearing tested by diagnostic audiometer. Those who use the mobile phone for minimum of two hours per day are classified as heavy users, and those who use the mobile phone for less than two hours are classified as moderate users, while those who do not use the phone are classified as non-users of mobile phone.

Results: Heavy users of mobile phone show statistically significant prevalence of mild sensorineural hearing impairment, of no other possible underlining cause or risk factor. This is in comparison with the moderate users and the non-users, who all show normal hearing. Heavy users also show elevated auditory threshold at the minimum speech tone, compared to the other two classes, which means that they might be, generally, more at risk for developing sensorineural hearing impairment. This study does not show association between long-term use of the mobile phone in years and hearing impairment.

Conclusion: Mobile phone has adverse effects on auditory function in humans. These effects need to be more thoroughly investigated.

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